Adam King COMP 5130 - Fall 2022 Project Report

The Problem to be Solved

Recently at UML, the number of students has increased dramatically. As a result it has become increasingly difficult to properly distribute permission numbers to students. The old system of responding to every direct email a student sends asking for a permission number to provide one has become too demanding for professors and an annoyance for students. As a result, a number of professors have started using a system of simply providing a spreadsheet containing the permission numbers where the students can reserve a number by simply providing their email, student ID etc. in a spreadsheet row that contains the number. This system has the issue, however, that some students will not bother properly entering their information and simply take the number without telling others, or may try to "steal" a number by using a number another student has already properly reserved in the sheet.

Project Goals / Our Approach

Our project here is offering a better way to handle this permission number distribution, by entering them into a central system where students can provide their information to reserve one. As the only interface the students have to the numbers is the provided UI that only allows entering their information and receiving an assigned permission number, the two earlier described issues of stealing numbers or not properly reserving numbers is resolved. The project also provides a way for professors to free up numbers they see haven't been used but are reserved in the system, as well as add/remove permission numbers from the system if they know the numbers have been used up, or they have expanded the class and have new numbers to use. The project works through a web UI, so after everything is installed and setup, all of this class and permission number management should be possible through the web UI that handles some of the details. Then, once the class signup period is over, the professor can simply tear down the project instance. The project is meant to be very easy to install and setup so that the professor can quickly tear down or create new instances on the UML cs servers (or some other server that has a web server setup on it if they so choose). Basically, the way the project works is the professor installs it on a web server, sets up their account, adds the class(es) they are teaching and the numbers for the class(es) and then sends a message out to students that that is the way to grab numbers. The students only have the ability to provide their name, email and student ID and in return are assigned a permission number the professor provided for the selected class. The project handles the situation where no more numbers are available (by informing the student) and students are able to check what number they were assigned if they forgot. The professor can

occasionally check in on which permission numbers have been used. If they see some of the numbers are used up, they may remove them from the list of numbers (or just leave them if they want, as the system will not re-assign taken numbers). If they see some numbers have been taken for a long time, the professor also has the ability to “free” the number so any other student who tries to request one will be able to get one. This means students can reserve only one number (the system works on a one number per student ID setup), can retrieve the number they are assigned if they forgot, and can’t “steal” others numbers. The professor only has to occasionally check in and free or add numbers as necessary and doesn’t have to worry about being responsive to any potential student emails requesting numbers.

Alternative Approaches and Why This Approach

Alternative approaches that have been tried so far are limited to the two methods mentioned earlier: directly responding to student emails and using a spreadsheet. I’ve already mentioned in the first section the difficulties around these setups and in the second section why our project is a better way to do it. Most importantly, it is asynchronous, which means the professor themselves stops being a bottleneck for the number distribution (obviously saving both the professor and student time) as well as more organized, so you don’t have to rely on the honor system among students for properly getting numbers like in the looser spreadsheet setup.